

# Notice of Allowability

Application No.

10/724,497

Examiner

Michael Trinh

Applicant(s)

LAMSON ET AL.

Art Unit

2822

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/29/2005.
2. ☒ The allowed claim(s) is/are 24-29.
3. ☒ The drawings filed on 01 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL:

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 12-01-2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



Michael Trinh  
Primary Examiner

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**DETAILED ACTION**

\*\*\* This office action is in response to Applicant's response filed July 29, 2005. Claims 1-22 were canceled. Claims 23-36 are pending, in which claims 23,30-36 are non-elected without traverse.

**Election/Restriction**

1. Applicant's election without traverse of Group II, claims 24-29 in Paper mail July 29, 2005 is acknowledged. Claims 23,30-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

**Examiner's Amendment**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. This application is in condition for allowance except for the presence of claims 23,30-36, non elected invention, without traverse. Accordingly,

**IN THE CLAIMS:**

\*\*\* Claims 23,30-36 have been canceled.

**IN THE SPECIFICATION:** (For correction of typographical error)

\*\*\* Specification page 9, line 25, change "mad of" to --made of--.

***Allowable Subject Matter***

4. Claims 24-29 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

The references including Suzuki (5,866,942), Kalidas (6,396,136), Stearns et al (6,160,705), etc., of record, alone or in combination, do not fairly anticipatively disclose each and every aspect of the method for fabricating a high performance, high I/O ball grid array substrate, intended for two patterned metal layers and integrated circuit flip-chip assembly, or

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fairly make a prima facie obvious case of the claimed method, in combination with other processing claimed limitations as recited in base claim 24, the inclusion of filling the via holes in the insulating layer having a first and a second surface with electrically conductive material; attaching one of the metal layers to the first surface, the metal layer intended to provide electrical ground potential; forming a plurality of electrically insulated openings in the metal layer, the openings intended for outside electrical contacts; attaching the other of the metal layers to the second surface, the metal layer intended to provide electrical signal and power potentials; configuring portions of the metal layer as a plurality of electrical signal lines, further portions as a plurality of first electrical power lines, and further portions as a plurality of second electrical power lines, thereby creating contact between selected signal and power lines and the vias; forming an insulating protective film over the exposed surface of said ground layer, and an insulating film over the exposed surfaces of the signal and power lines; and forming pluralities of openings in both said insulating films, and filling said openings with solderable metal, thereby creating attachment sites for outside solder balls and for chip solder bumps.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Trinh whose telephone number is (571) 272-1847. The examiner can normally be reached on M-F: 8:30 Am to 5:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone numbers for the organization where this application proceeding is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Oacs-17



Michael Trinh  
Primary Examiner